AnyDATA.NET
Wireless Wi-Fi Router, AWR-501L

(User Manual)

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AnyDATA®

AnyDATA CDMA Module Series Reference Design Specification
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1. Introduction

1.1 Feature

- The AWR-501L CDMA 1x EV-DO IP Router supports the WLAN 802.11 b/g standard providing constant 54Mbps data rates which are proven and secure technology.

- The AWR-501L combines the advanced CDMA EV-DO technique with the mature WAP technique together to provide one completely feasible, secure high-performance wireless network infrastructure.

- Wireless broadband connectivity and universal compatibility with a 1x EV-DO module with tethered data capability enables you to set up a WiFi hotspot virtually anywhere.

- Support 4 ports switching hub as LAN connection, Wireless up to 253 PC users (Recommend you ten PC users and less)

- High-speed data connections with rate up to 3.1Mbps

- NAT & NAPT Virtual Server

- Automatic receipt of IP address with DHCP server

- 4 Indicator LED for Power, CDMA, Wi-Fi, LAN

- Browser-based configuration and easy set-up wizard

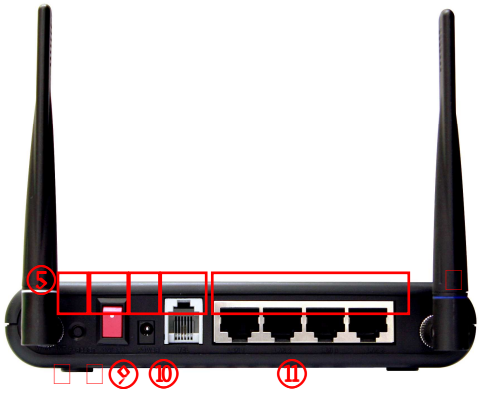
- Access Control to manage users

- User-friendly configuration and diagnostic utilities

- Industry-leading firewall security

- Supports 802.11 b/g Access Points, Routers and Gateway Server Applications

1.2 Front & Back view



1) Power LED: A red light indicates connection to the power supply.

2) CDMA LED: A red light indicates that connection on the 1x or EV-DO or Hybrid port.

3) Wi-Fi LED: A red light indicates that the connection on the WLAN interface is available.

4) LAN LEDs: A red light indicates a connection to an Ethernet-enabled computer (ports 1-4) This LED blinks during data transmission.

5) CDMA Antenna: Install a white lined antenna on the right side of the router

6) Wi-Fi Antenna: Install a blue lined antenna on the left side of the router

7) Reset Button: Press this button to restore the AWR-501L to its original factory default setting

- To restore AWR-501L to original factory setting, press and hold reset hole, and turn AWR-501L back on. Keep it 3 to 4 seconds and then release the reset hole once until both Wi-Fi and CDMA LED light at the same time.

8) Power On/Off Button

9) Receptor for Power Adapter

10) RJ11(“Telephon”) Port : For connection wire to phones

11) LAN Ports: These ports automatically sense the cable type when connection to Ethernet-enabled

Computers.

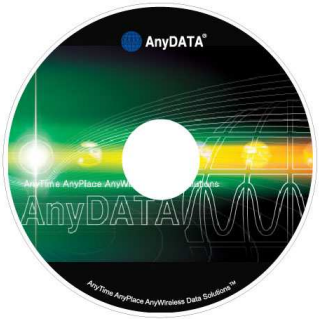
2. Package Contents

Router Modem

RJ45 Cable

5V DC Power Adaptor

User Manual (CD-ROM)



Antenna

3. Using the Configuration Menu

Admin Login

Once properly configured, the AWR-501L will obtain and assign IP address information automatically. Configuration settings can be done through the AWR-501L Configuration Menu. You can access this interface by performing the steps listed below:

1. Open a web-browser. Type in the **IP Address** of the AWR-501L **(http://192.168.2.1)**
   AWR-501L, ensure you enter the correct IP Address now.
   <Note> If you have changed the default IP Address assigned to the AnyDATA

2. Type “admin” in the User Name field.

3. Type “admin” in the Password Field.

   This is default value.

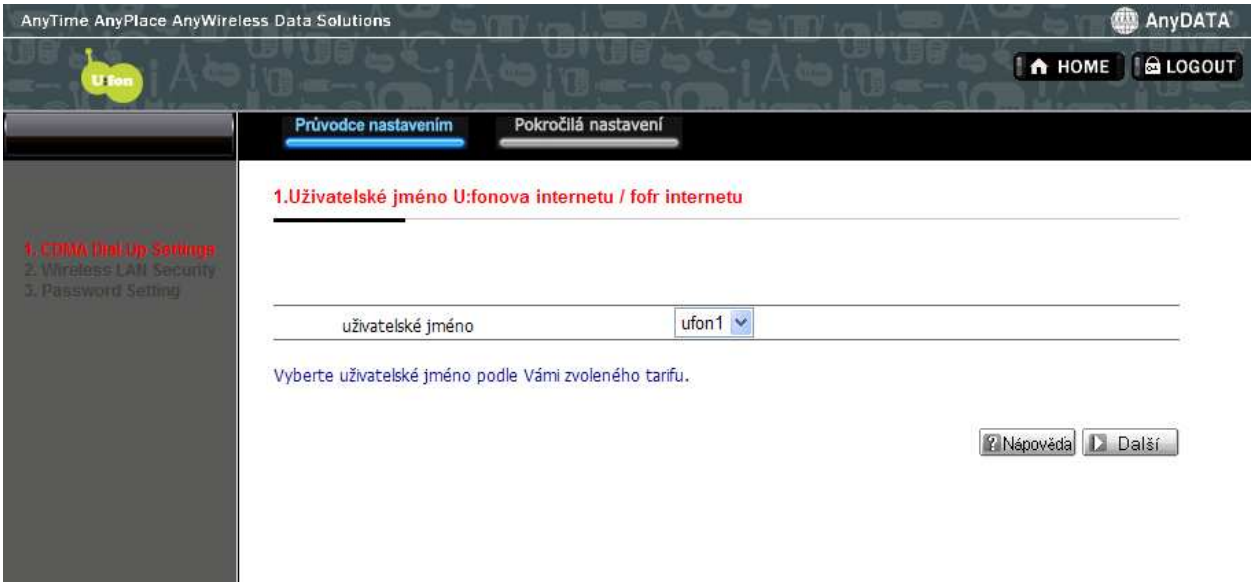
   User must change password to protect from any external hackings.

4. Click **LOGIN**

*** If you enter wrong password, You can try to login again after 10 seconds.**

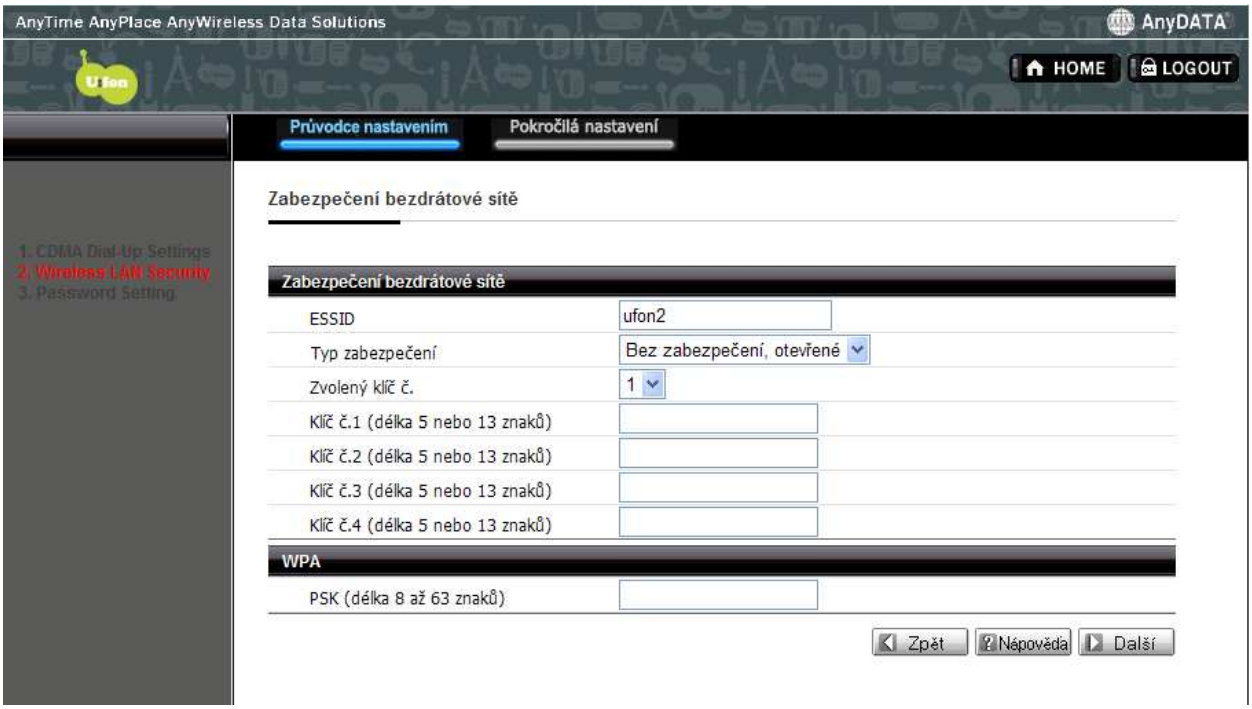
Setup Wizard > CDMA Dial-Up Setting

The **Setup Wizard** screen will appear.
Refer to the AWR-501L Quick Installation Guide for more information regarding the Setup Wizard.



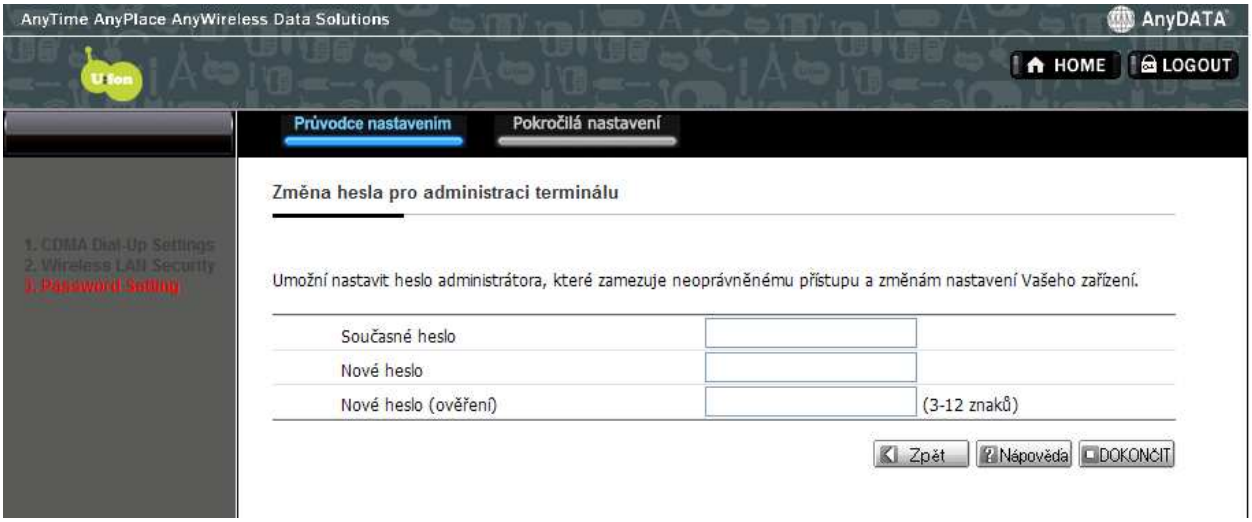
User Name Select the **User Name** for your EVDO connection here.

Setup Wizard > Wireless LAN Security



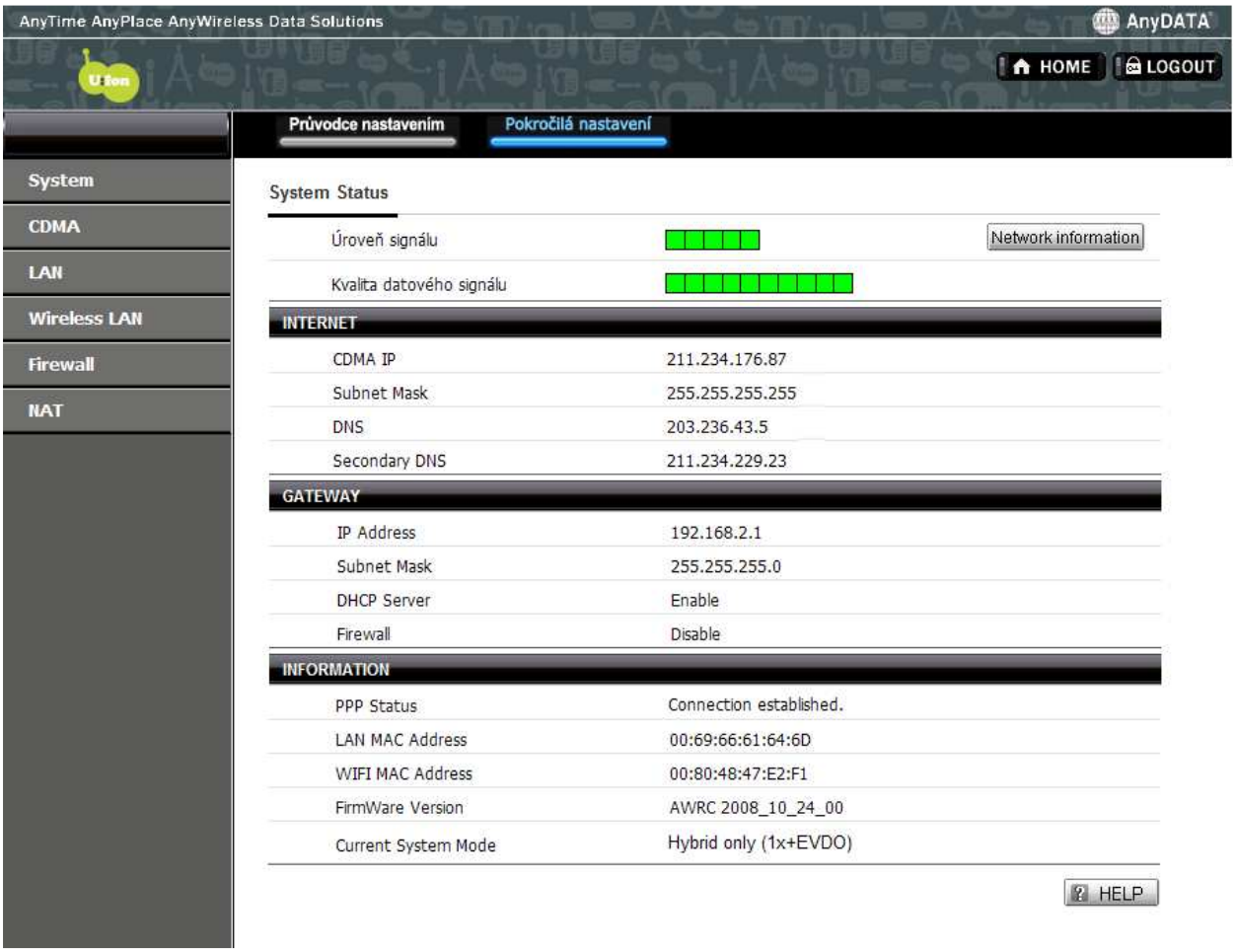
ESSID	You may change network name by entering new name
Security	From Authentication Type, you may select one of the following. - Open System: Non-security Mode - Shared Key (WEP) - WPA In order to use Shared Key (WEP)'s functionality, you need to enter password required for Active Key. (Password must be either 5 or 13 ASCII code.) Once you complete configuration, then you will see the message box saying "After System Reset, Your setting value will be applied". Click OK and reset to make the change effective.
WPA	In order to use WPA functionality, you need to enter password required for Active Key. (Password must be from 8 to 63 ASCII code) Once you complete configuration, then you will see the message box saying "After System Reset, Your setting value will be applied". Click OK and reset to make the change effective.

Setup Wizard > Password Setting



Current Password	Enter the current password for your connection here
Password	Enter the new Password to change for your connection here.
Re-type password	Enter your new password again for confirmation Re-type password is case sensitive to Password.

Advanced Setup > System > System Status



System Status

Antenna Level: Displays current Antennal level
Data rate : Display current data transfer speed

INTERNET

WAN IP : Displays IP address provided by Internet Service Provider (ISP)
Subnet Mask : Displays Subnet Mask for the IP address provided by Internet Service Provider (ISP)
DNS : Displays address of primary Domain server
Secondary DNS: Displays address of secondary Domain Server.

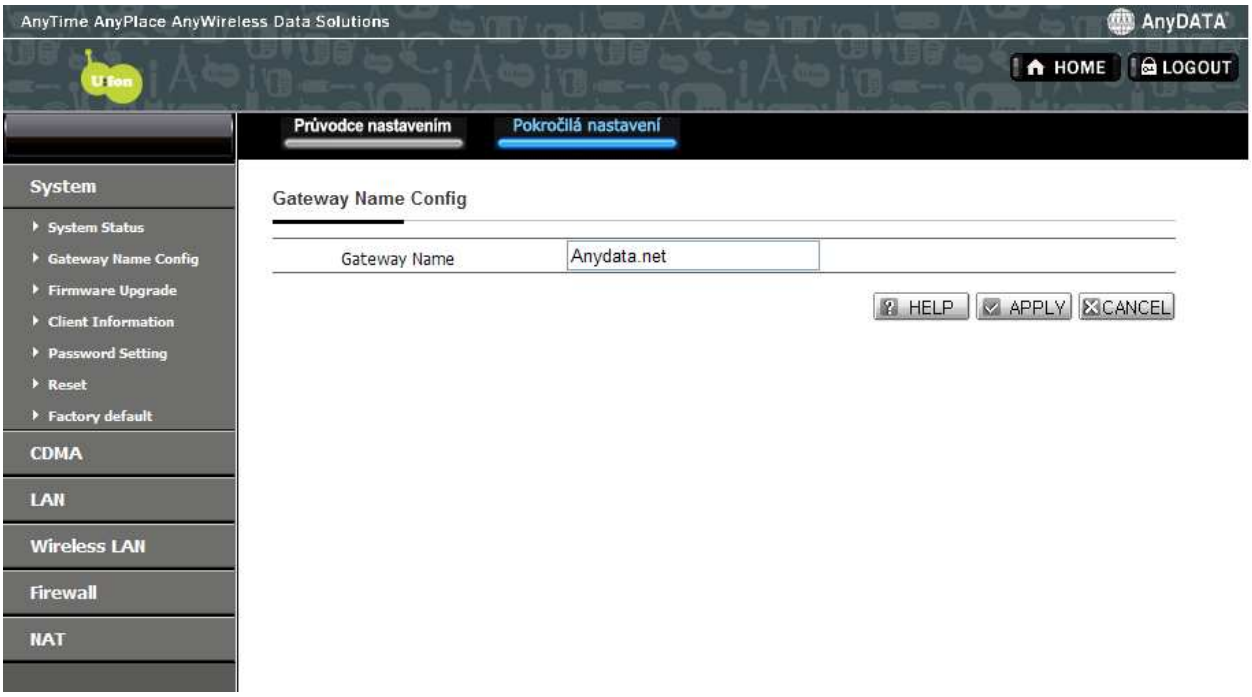
GATEWAY

IP Address : Display LAN IP address of AWR-501L.
Subnet Mask: Display LAN Subnet Mask of the AWR-501L
DHCP Server: Shows whether or not the DHCP server is Enabled or Disabled
Firewall : Shows whether or not the Firewall is Enabled or Disabled.

INFORMATION

PPP Status : Displays ROUTER's connection status.
LAN MAC Address : Displays AWR-501L's unique MAC address.
WIFI MAC Address: Displays AWR-501L's MAC address configured in WAN port. In WAN port.
Firmware Version: Displays firmware version of AWR-501L
Current System mode: Displays CDMA mode

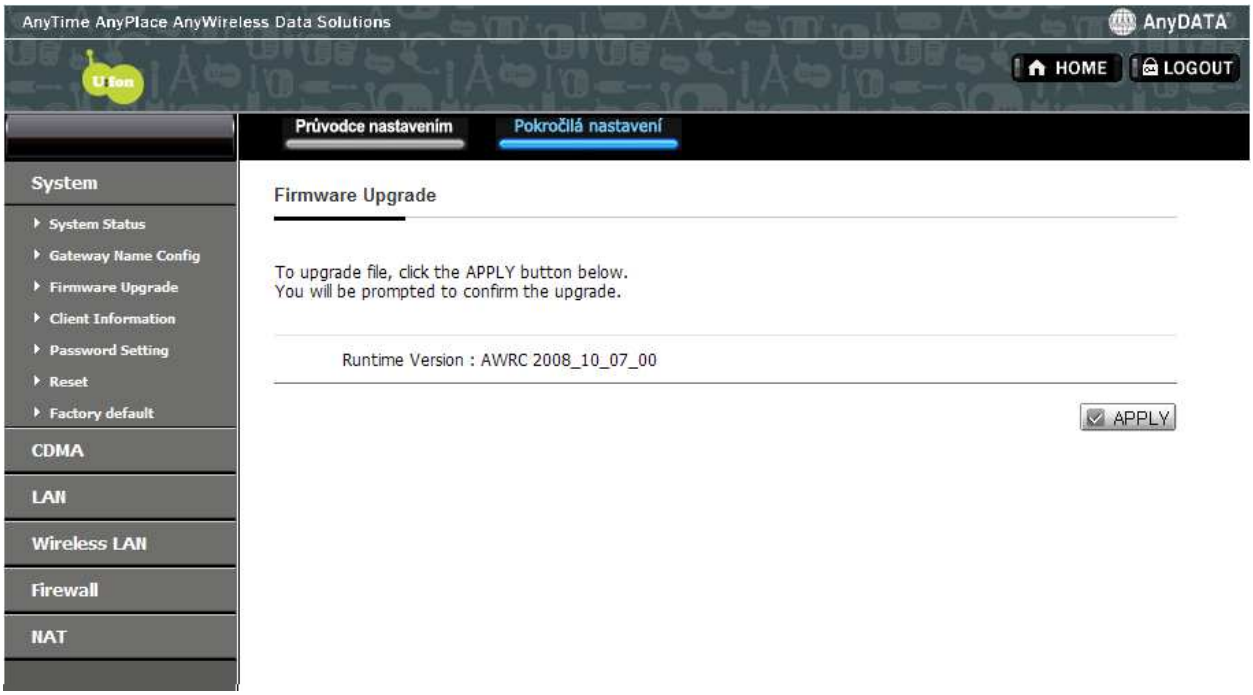
Advanced Setup > System > Gateway Name Config



Gatewayt Name Enter the Gateway Name for AWR-501L and click “APPLY”

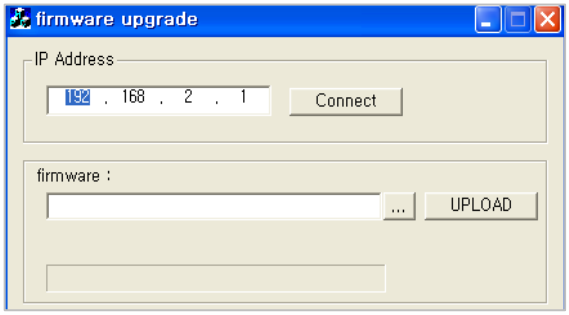
<Note> Gateway name must include “,”.

Advanced Setup > System > Firmware Upgrade



→Firmware Update

1) Download latest firmware from AnyDATA's web site, and save it in hard drive.
2) Click Apply to configure IP Address and to browse firmware you have saved in your hard drive. If you click "Apply", you may encounter internet explorer security warning message twice. In this case, you are required to click "Run"
3) Upon clicking RUN twice, you will have windows as below.



→From the window, enter IP address and click Connect.
Please note that IP address, 192.168.2.1 will be displayed by default.

→Select the firmware you have saved in your hard drive by clicking ..., and click UPLOAD.

Upgrading firmware will normally take 4 to 5minutes.
Improperly upgraded software may cause fatal error to AWR-501L.

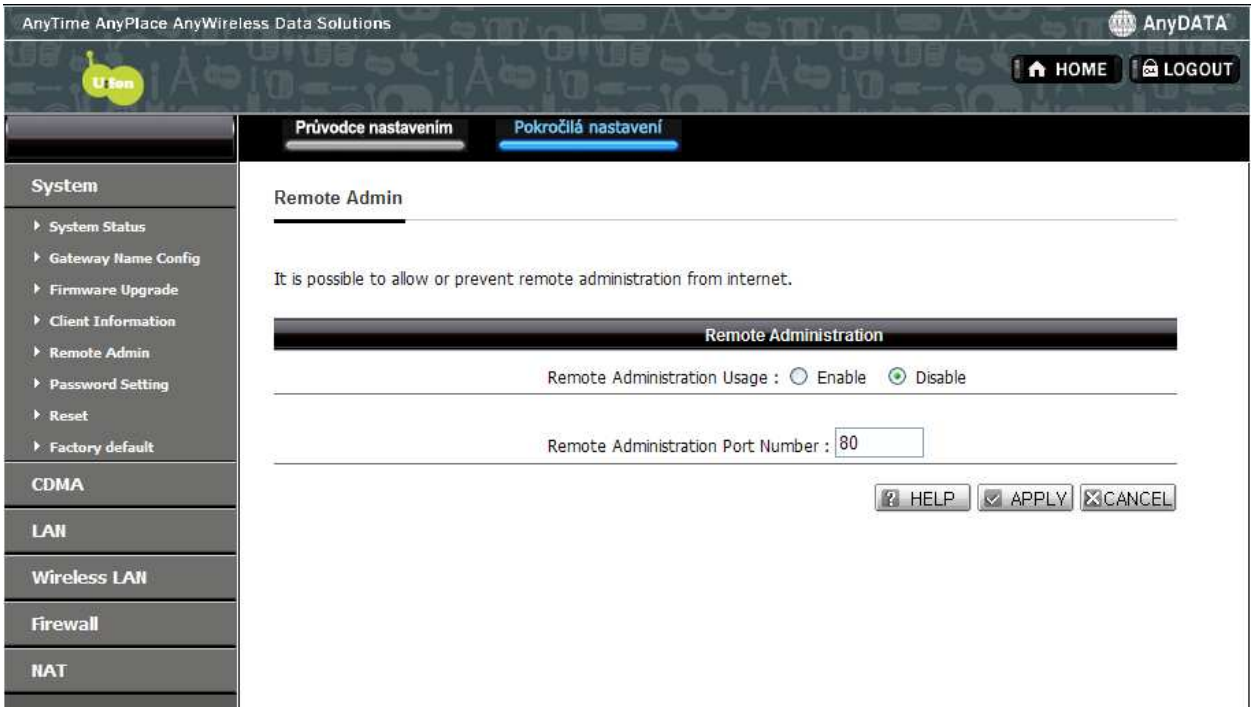
Advanced Setup > System > Client Information

Client Information Displays client list that using this ROUTER and their information.

Advanced Setup > System > Remote Admin

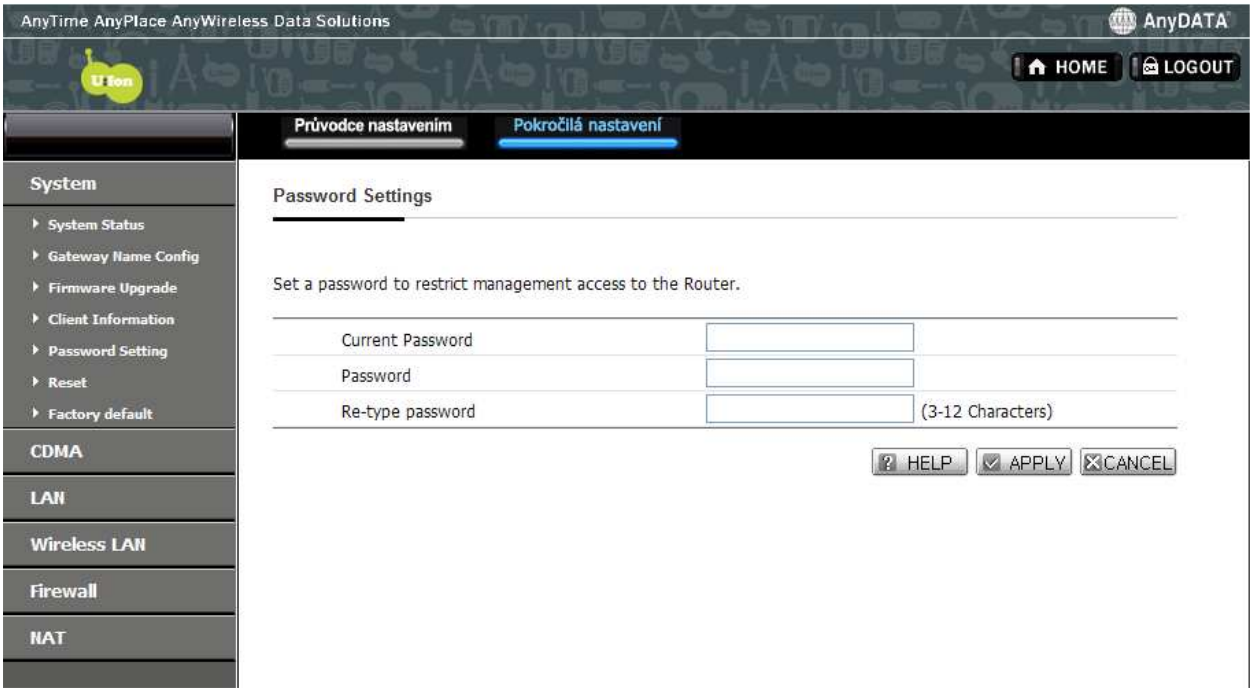
It must be set disable by default because of security reason.

Please use more complex password, if you would like to set “Enable” this feature.



Remote Admin	If it set “Enable”, It is possible to allow remote administration from internet. Please use more complex password, if you want to set “Enable” this feature.
Remote Administration Port Number	Set the port number to access remote administration from internet.

Advanced Setup > System > Password Settings



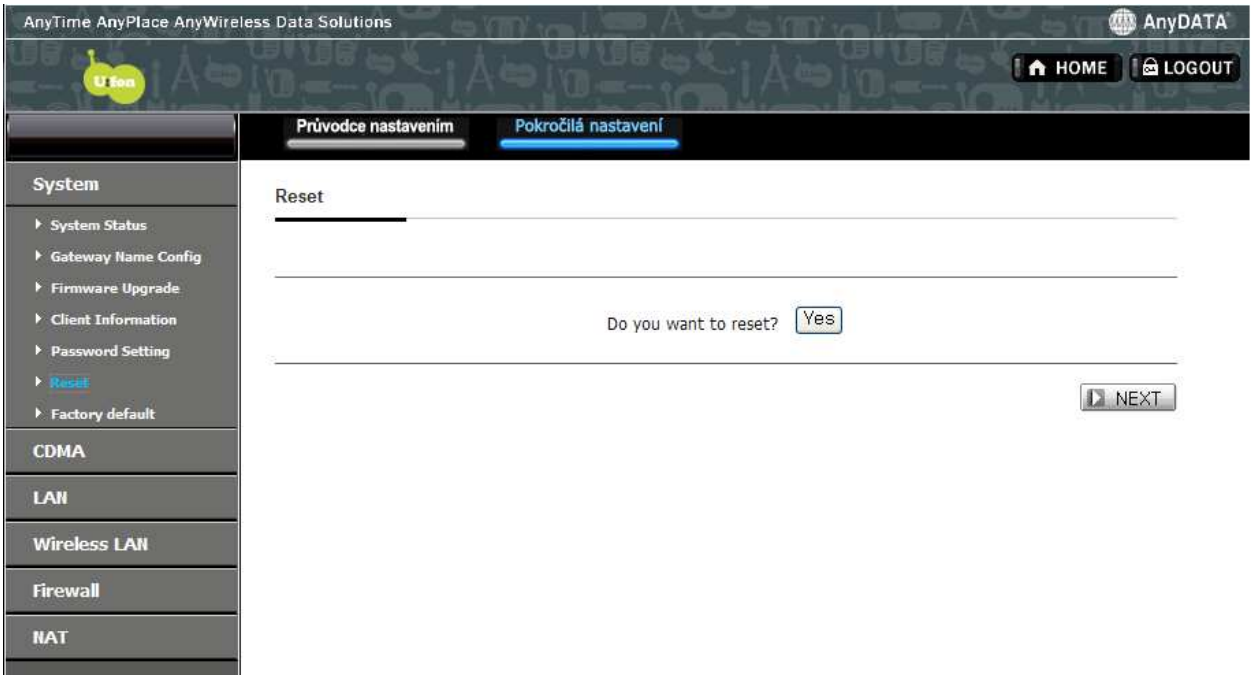
Current Password Enter the current password for your connection here

Password Enter the new Password to change for your connection here.

Re-type password Enter your new password again for confirmation
Re-type password is case sensitive to Password.

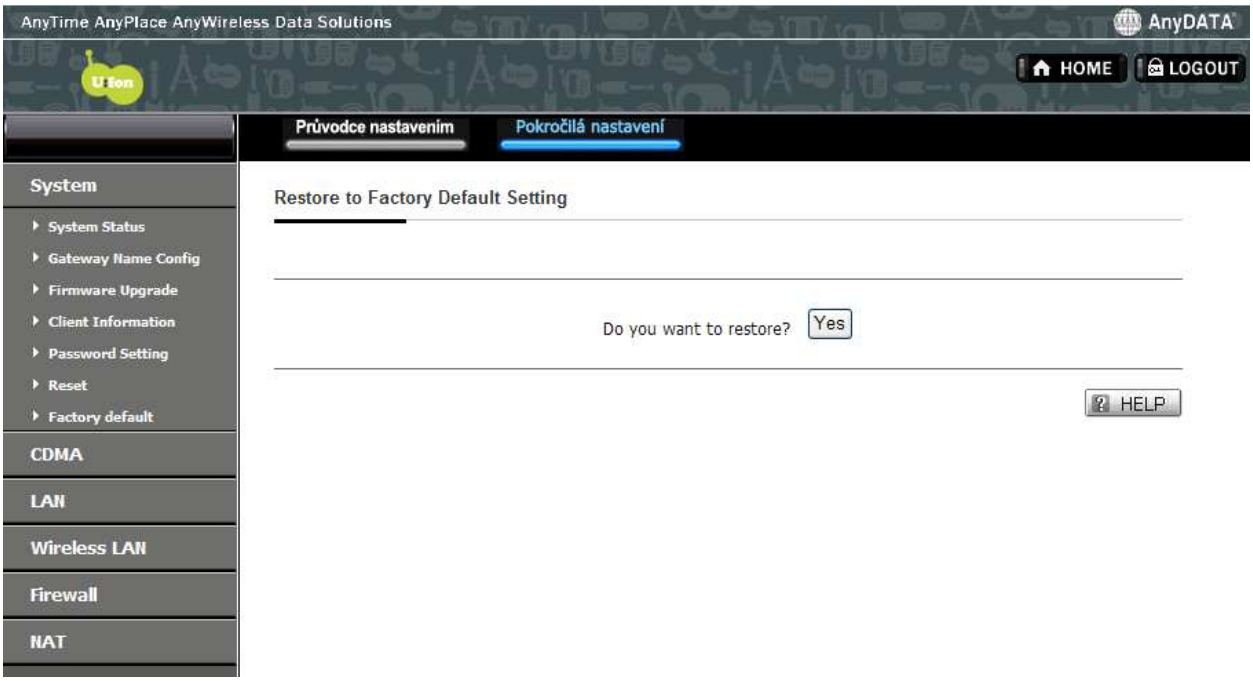
If you lost password or want default setting, do initialization to Factory default setting.
The default ID and password are “admin” and “admin” respectively.

Advanced Setup > System > Reset



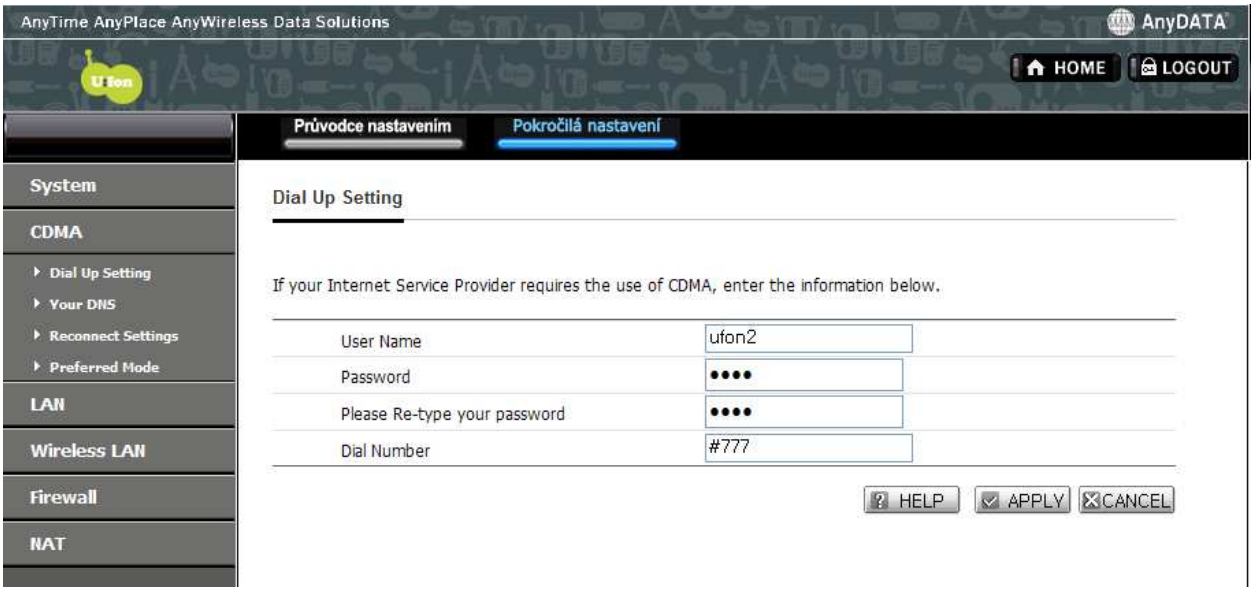
Reset	You may reboot AWR-501L by clicking Yes If you want to change security and CDMA dial-up setting, you may use this reset feature.

Advanced Setup > System > Factory default



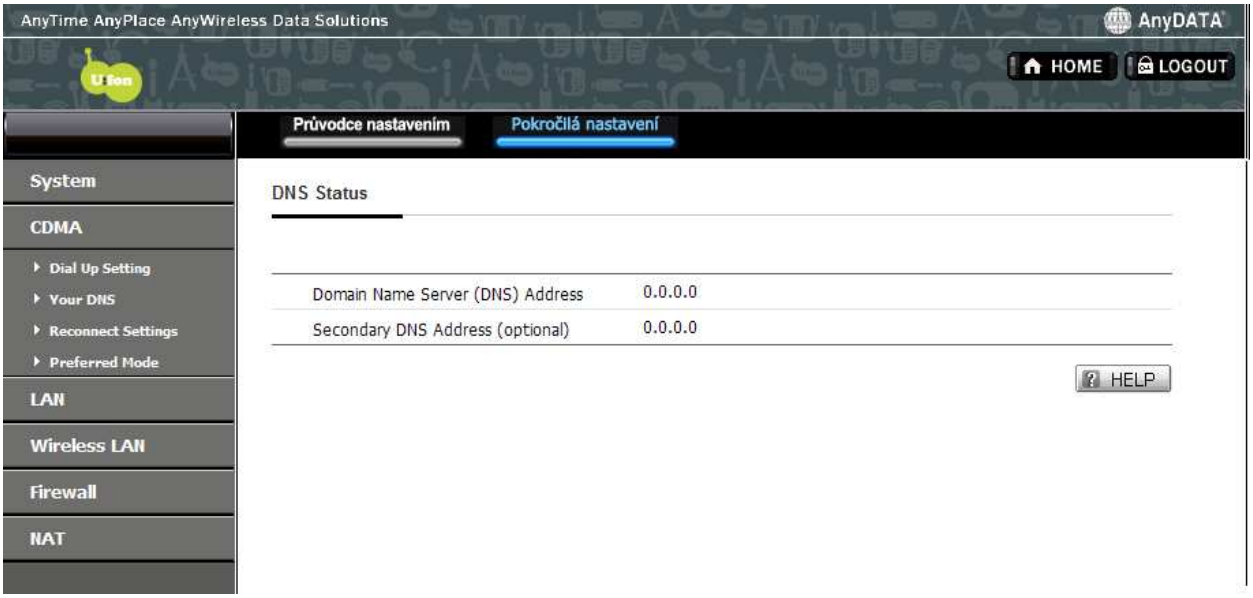
Factory default You may restore the AWR-501L back to factory default setting by clicking YES

Advanced Setup > CDMA > Dial Up Setting



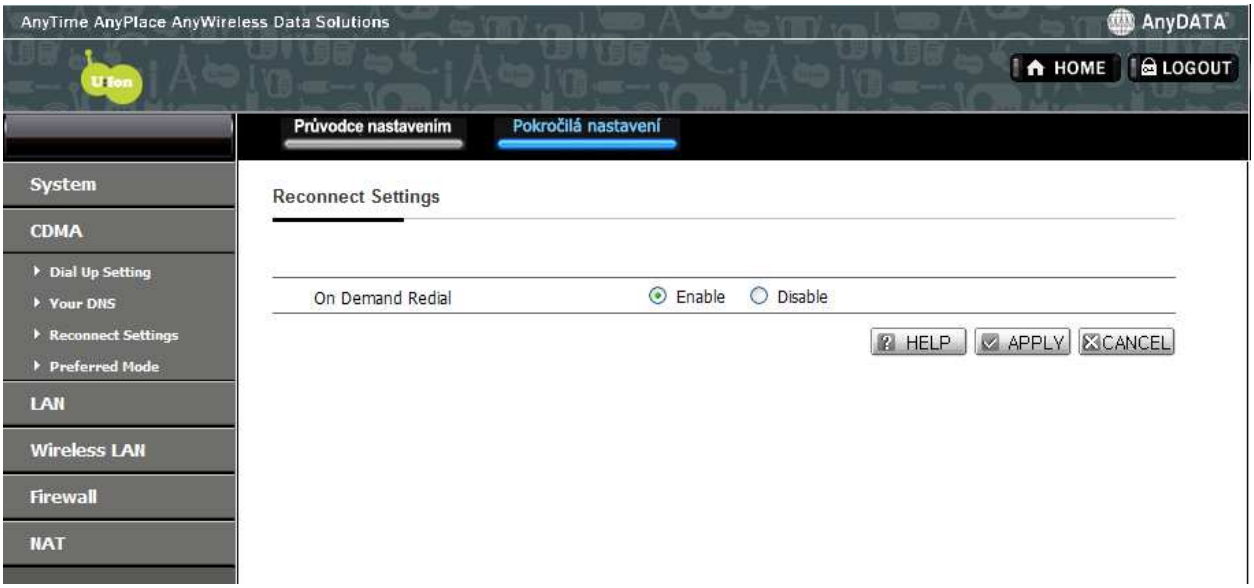
User Name	Select the **User Name**(e.q. ufon1 or ufon2) for your EVDO connection here.
Password	Enter the **Password** for your EVDO connection here.
Dial Number	Enter the Internet Connect Dial Number.

Advanced Setup > CDMA > Your DNS



Domain Name Server(DNS) Address	Displays the DNS address given to AWR-501L
Secondary DNS Address	Displays the Secondary DNS address given to AWR-501L

Advanced Setup > CDMA > Reconnect Settings

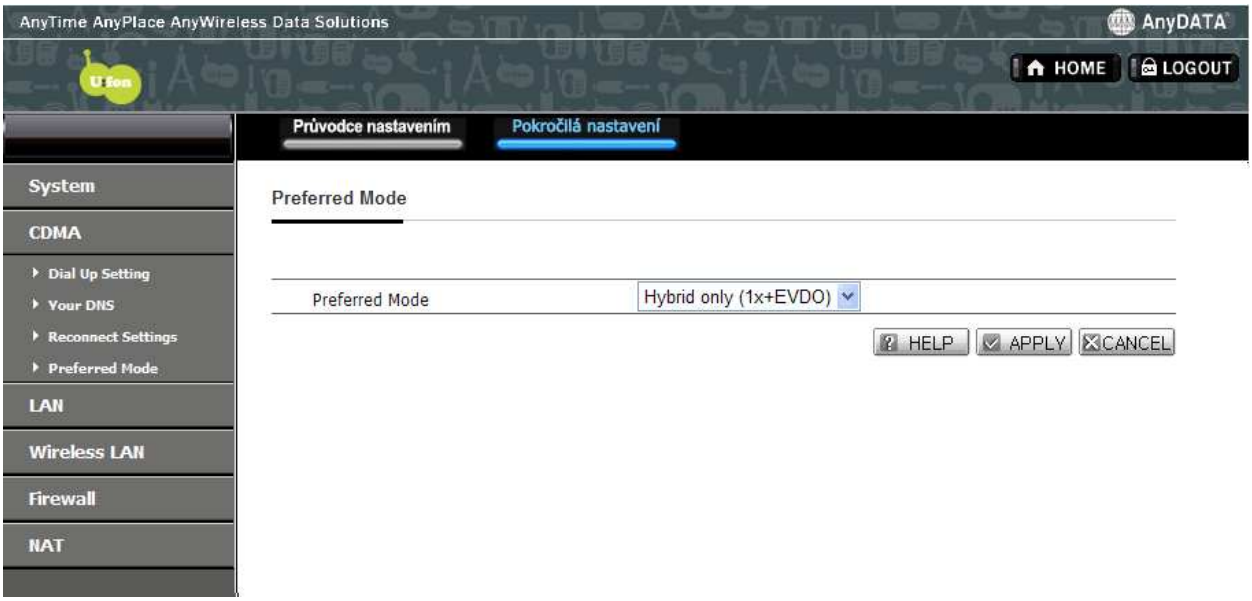


On Demand Redial

Select the “Enable”
When the internet disconnect, if the user uses the internet, it will again Connected.

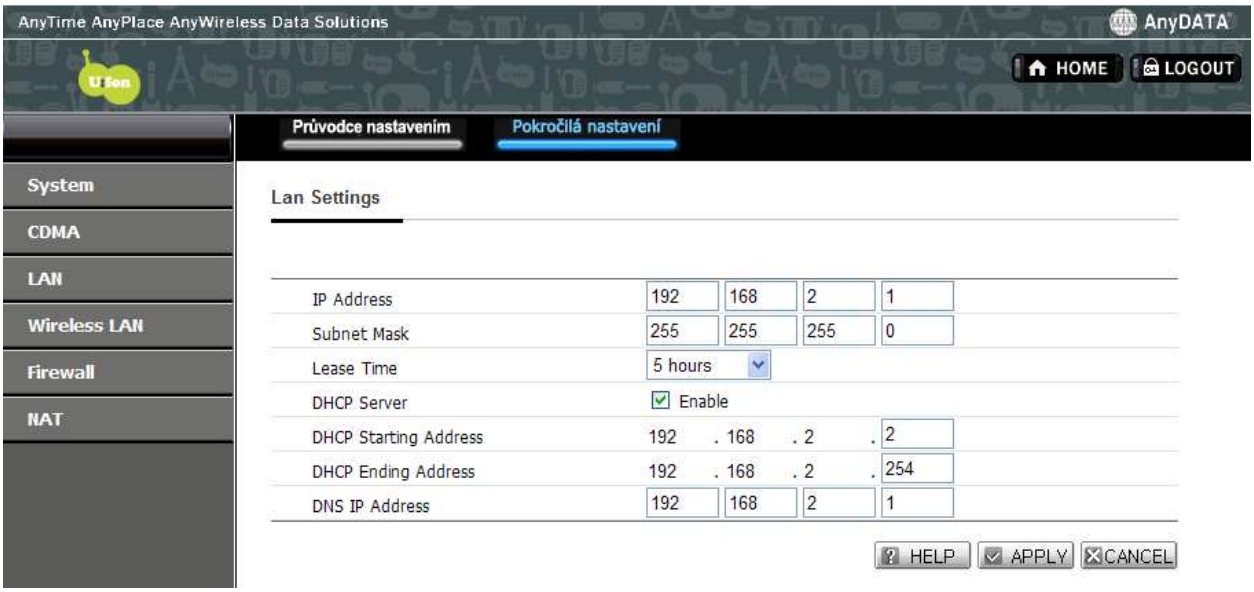
Select the “Disable”
When internet disconnect, it retry connection rightly.

Advanced Setup > CDMA > Preferred Mode



Preferred Mode Digital only: Connecting automatically during 1x and EVDO communication
EVDO: Connecting to EVDO only

Advanced Setup > LAN > LAN Setting



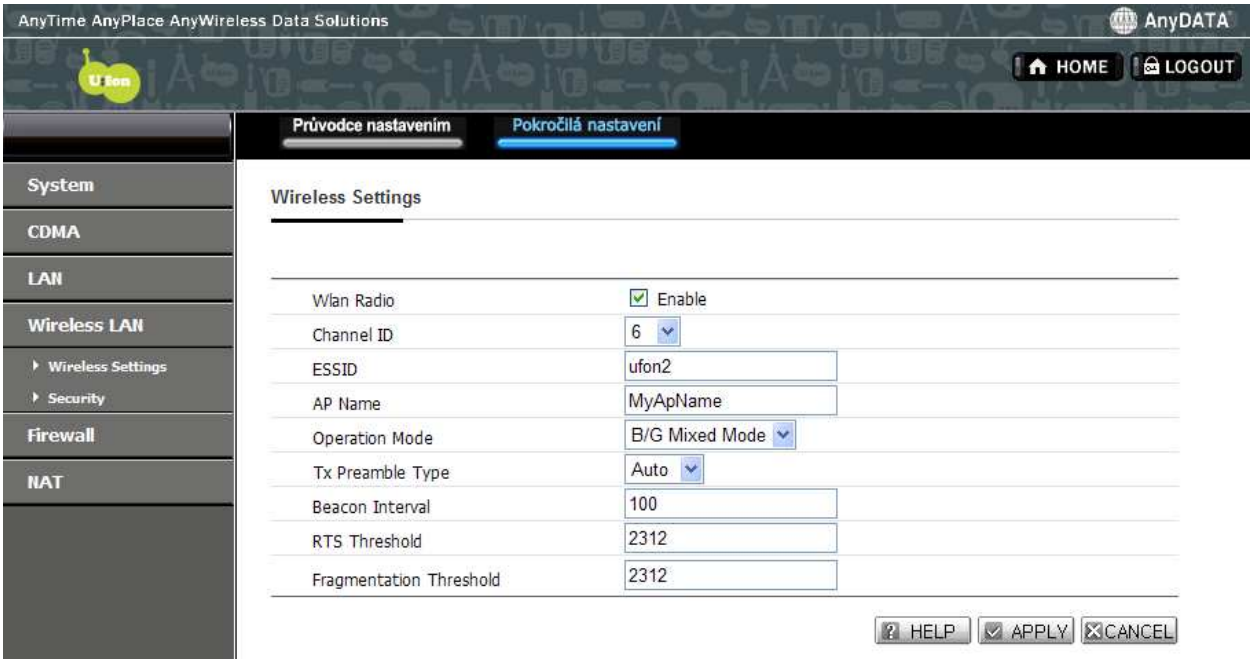
IP Address	If you want to change IP address of AWR-501L, enter new IP address and click “Apply”
Subnet Mask	Displays Subnet Mask address of AWR-501L By default, 255.255.255.0 is set
Lease Time	This will adjust the Lease Time for you to receive IP from the gateway of AWR-501L You may select the Lease Time from pull-down menu and change it by clicking “Apply” If Lease Time exceeded, you may receive New IP again from AWR-501L
DHCP Server	Check whether you want DHCP Server to be enabled or not.
DHCP Starting Address / Ending Address	If you want to change IP address range of DHCP Server, enter new IP address range and click “Apply:
DNS IP Address	If you want to change IP address of DNS Server, enter new IP address of DNS and click “Apply:

<Note>

In case the internet is not available due to changing IP Address or DNS setting, press Reset button to restore AWR-510L to its original Factory Default setting (see the page 5)

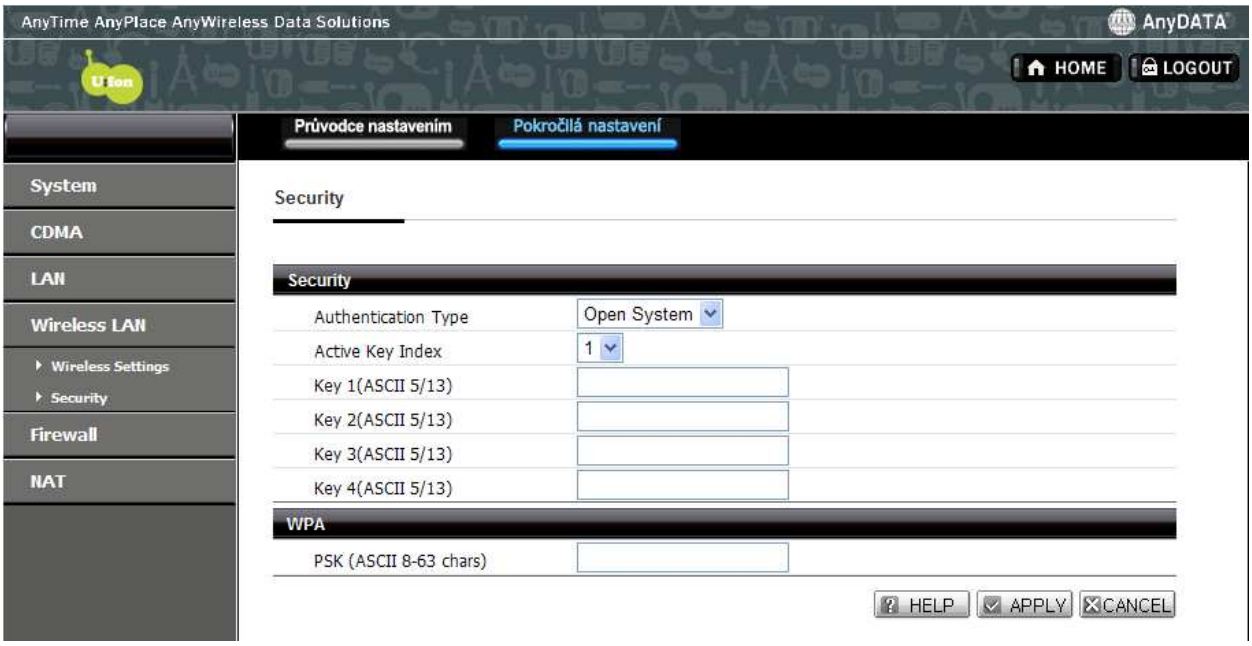
To change IP Address, you should use the IP Address you have changed when accessing WEB-UI.

Advanced Setup > Wireless LAN > Wireless Setting



Wlan Radio	Check whether you want wireless AP to be enabled or not.
Channel ID	Select appropriate channel ID to be used in wireless network.
ESSID	You may change network name by entering new name and clicking “Apply”
AP Name	You may change AP name by entering new name and clicking “Apply”
Operation Mode	You may select G mode only (support 54Mbps) or B mode only (support 11Mbps) or B/G Mixed mode for both. You may select operation mode and change by clicking “Apply”
Tx Preamble Type	Select Short or Long Preamble. The Preamble defines the length of the CRC block (Cyclic Redundancy Check is a common technique for detecting data transmission errors) for communication between the AWR-501L and the roaming wireless network adapters. Recommended type is Auto
Beacon Interval	This is to notify whether or not the AP exists to PC. Its default interval is 100msec. The range of interval is from 25msec up to 501Lmsec.
RTS Threshold	This value should remain at its default setting of 2312 if inconsistent data flow is a problem, only a minor modification should be made.
Fragmentation Threshold	The fragmentation threshold, which is specified in bytes, deter-mines whether packets get fragmented. Packets exceeding the 2312 byte setting are fragmented before transmission. By **default** the Fragmentation is **2312.**

Advanced Setup > Wireless LAN > Security



Security

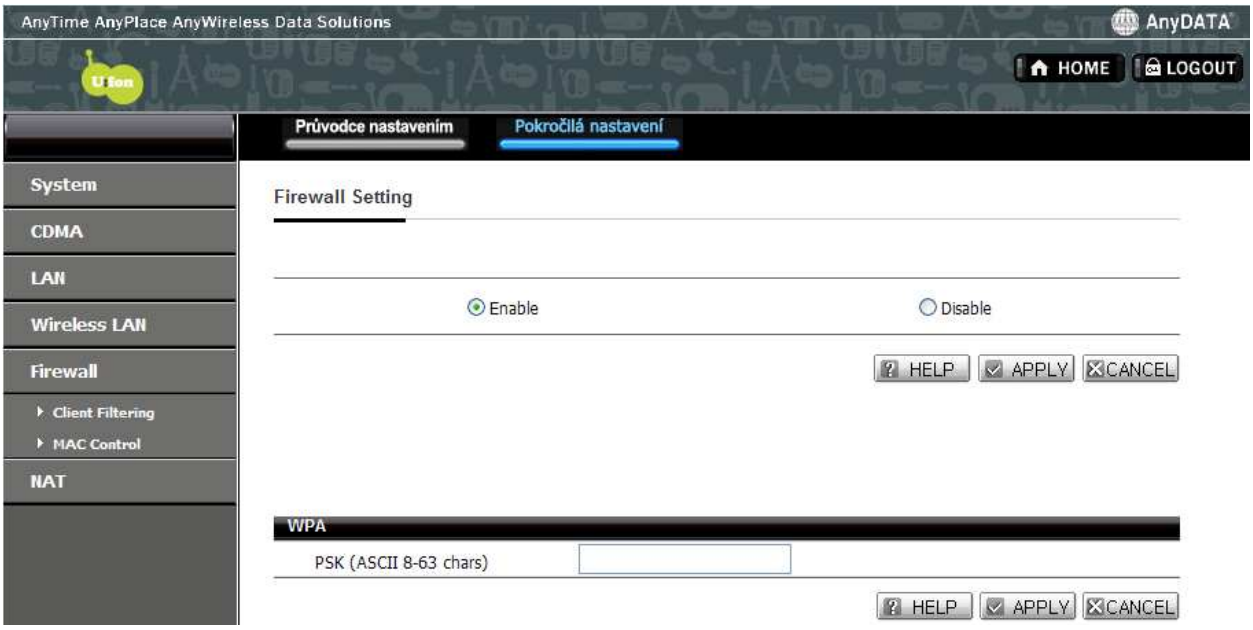
From Authentication Type, you may select one of the following.
- Open System: Non-security Mode
- Shared Key (WEP)
- WPA

In order to use Shared Key (WEP)'s functionality, you need to enter password required for Active Key. (Password must be either 5 or 13 ASCII code.)
Once you complete configuration, then you will see the message box saying "After System Reset, Your setting value will be applied". Click OK and reset to make the change effective.

WPA

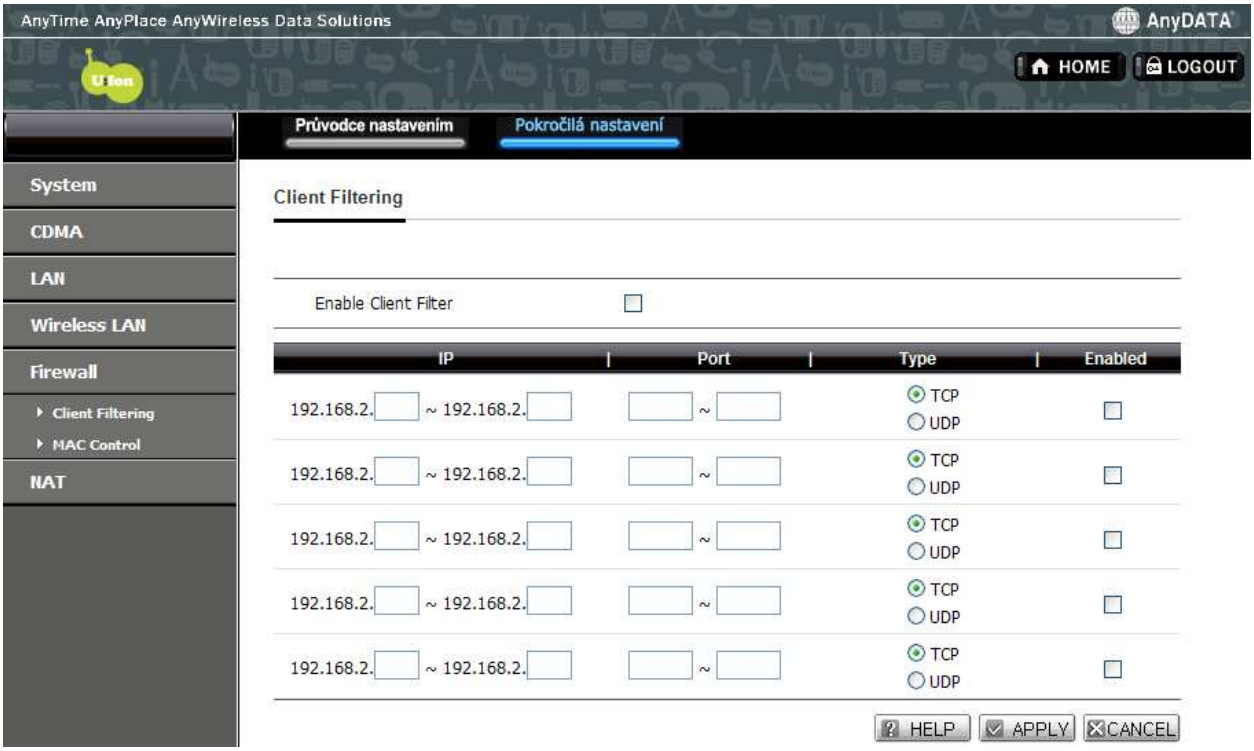
In order to use WAP functionality, you need to enter password required for Active Key. (Password must be from 8 to 63 ASCII code) Once you complete configuration, then you will see the message box saying "After System Reset, Your setting value will be applied". Click OK and reset to make the change effective.

Advanced Setup > Firewall > Firewall Setting



Firewall Setting	Select whether you want firewall to be enabled or disabled. One you select and click Apply, the change will be effective.

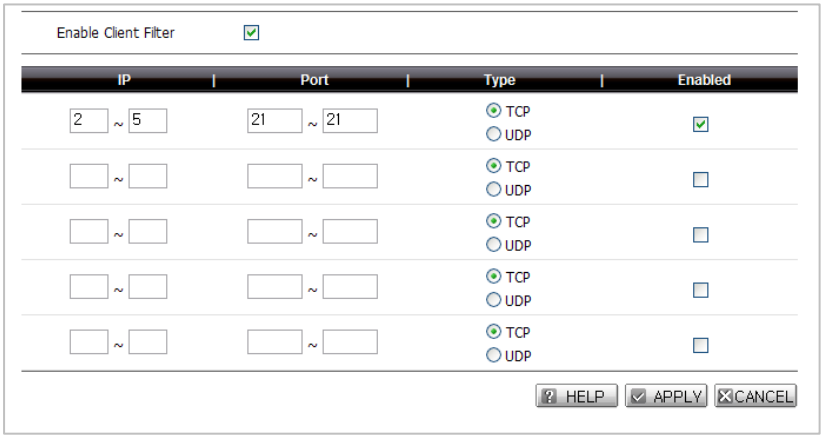
Advanced Setup > Firewall > Client Filtering



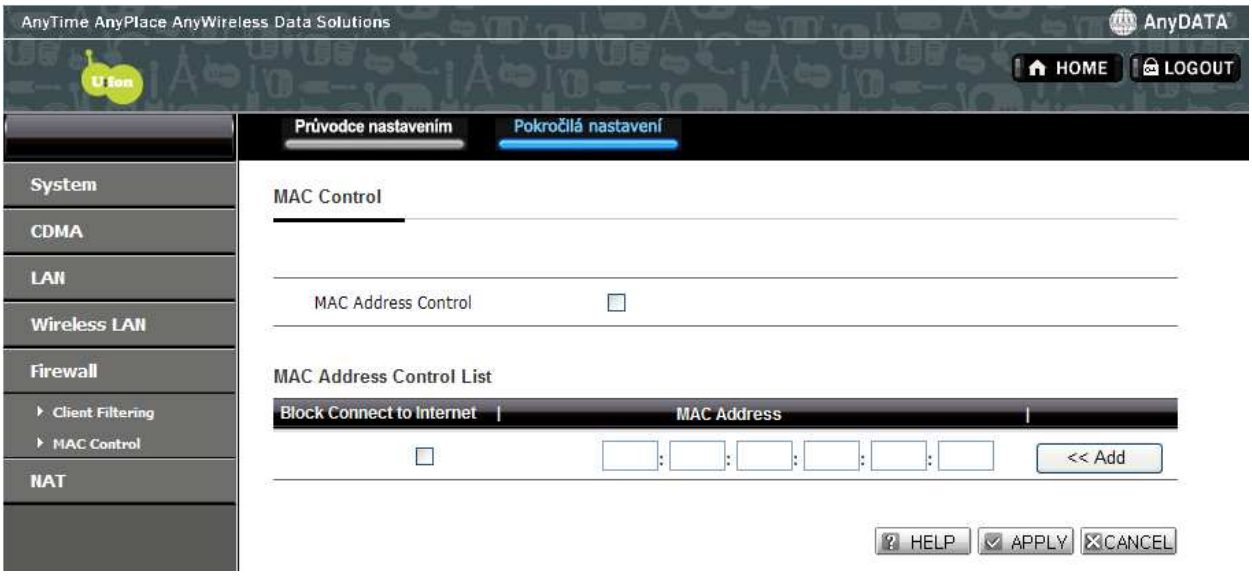
Enable Client Filter

This will restrict connection to certain site or application.
Enter the 4th IP address of Client PC, connected to AWR-501L
Enter the TCP/UDP port to block connection and check if you need them to be enabled. Put check mark on Enable Client Filter

Ex> The screen below will be displayed when you block Client PC whose IP address ranged from 192.168.2.2 to 192.168.2.5 from being connected to FTP

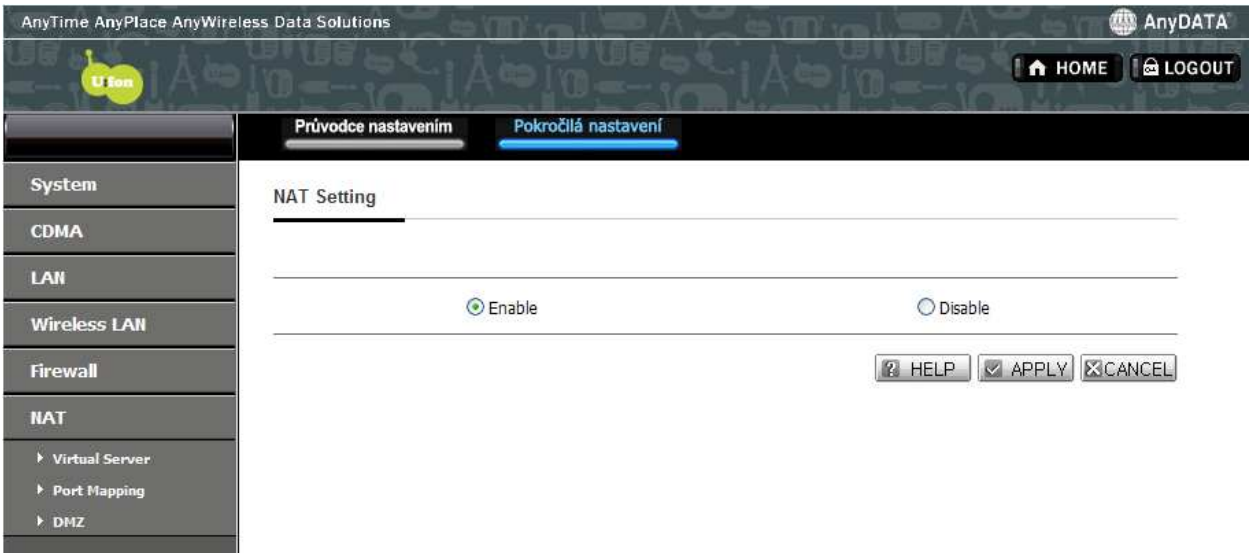


Advanced Setup > Firewall > MAC Control



MAC Address Control List	This is to block certain Client PC from connecting to internet. Enter the MAC Address of PC you want to block, and put check mark beside "Block Connect to Internet" and click "Add". The MAC address will be added and set. Put check mark below MAC Address Control.

Advanced Setup > NAT

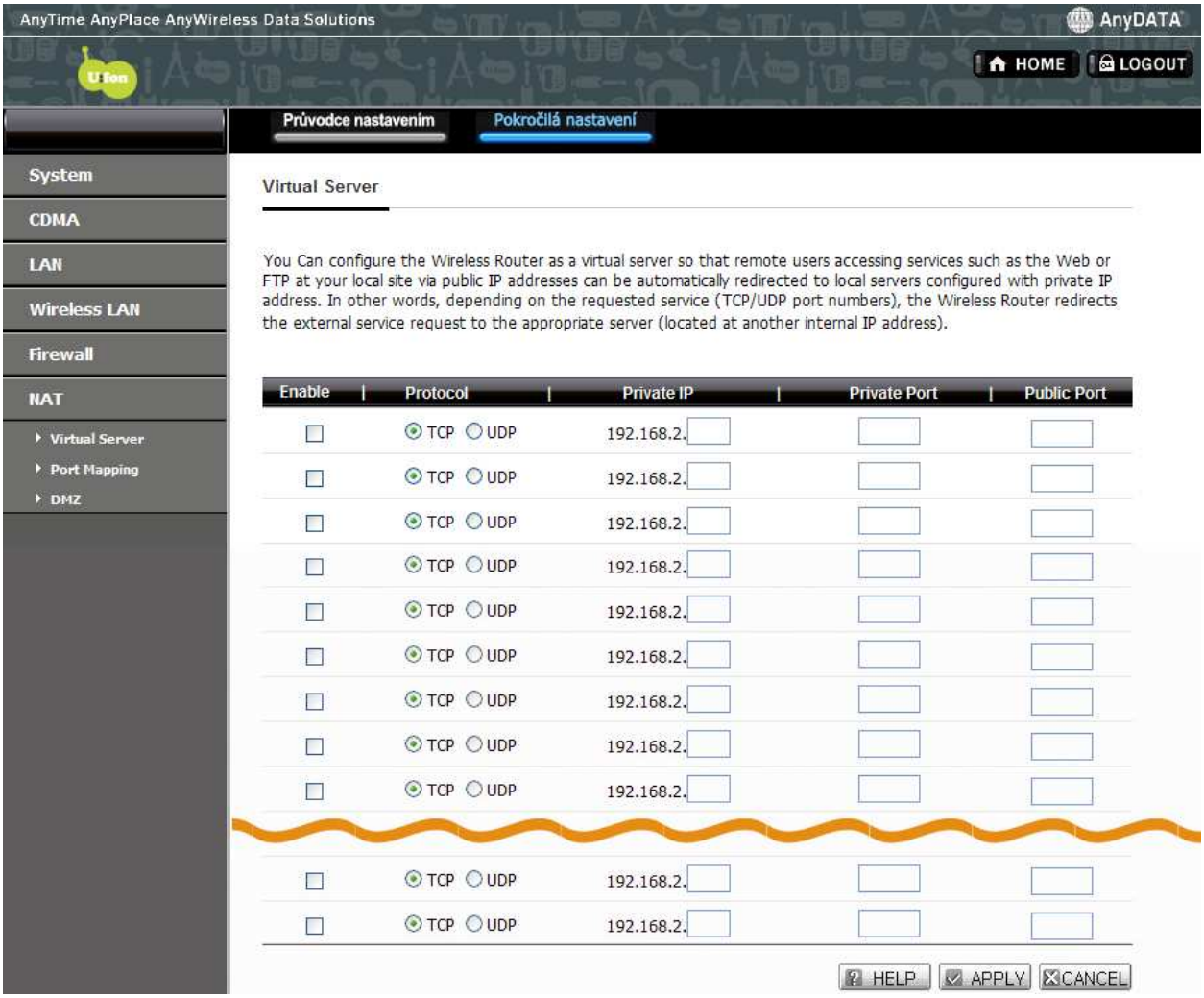


NAT Setting Select whether use NAT function or not.

*** What is NAT?**

In Computer Networking, the process of **Network Address Translation** (**NAT**, also known as **Network Masquerading**, **Native Address Translation** or **IP Masquerading**) involves re-writing the source and/or destination addresses of IP packets as they pass through a Router or firewall. Most systems using NAT do so in order to enable multiple hosts on a private network to access the Internet using a single public IP address (see gateway). Many network administrators find NAT a convenient technique and use it widely. Nonetheless, NAT can introduce complications in communication between hosts and may have a performance impact.

Advanced Setup > NAT > Virtual Server



Virtual Server

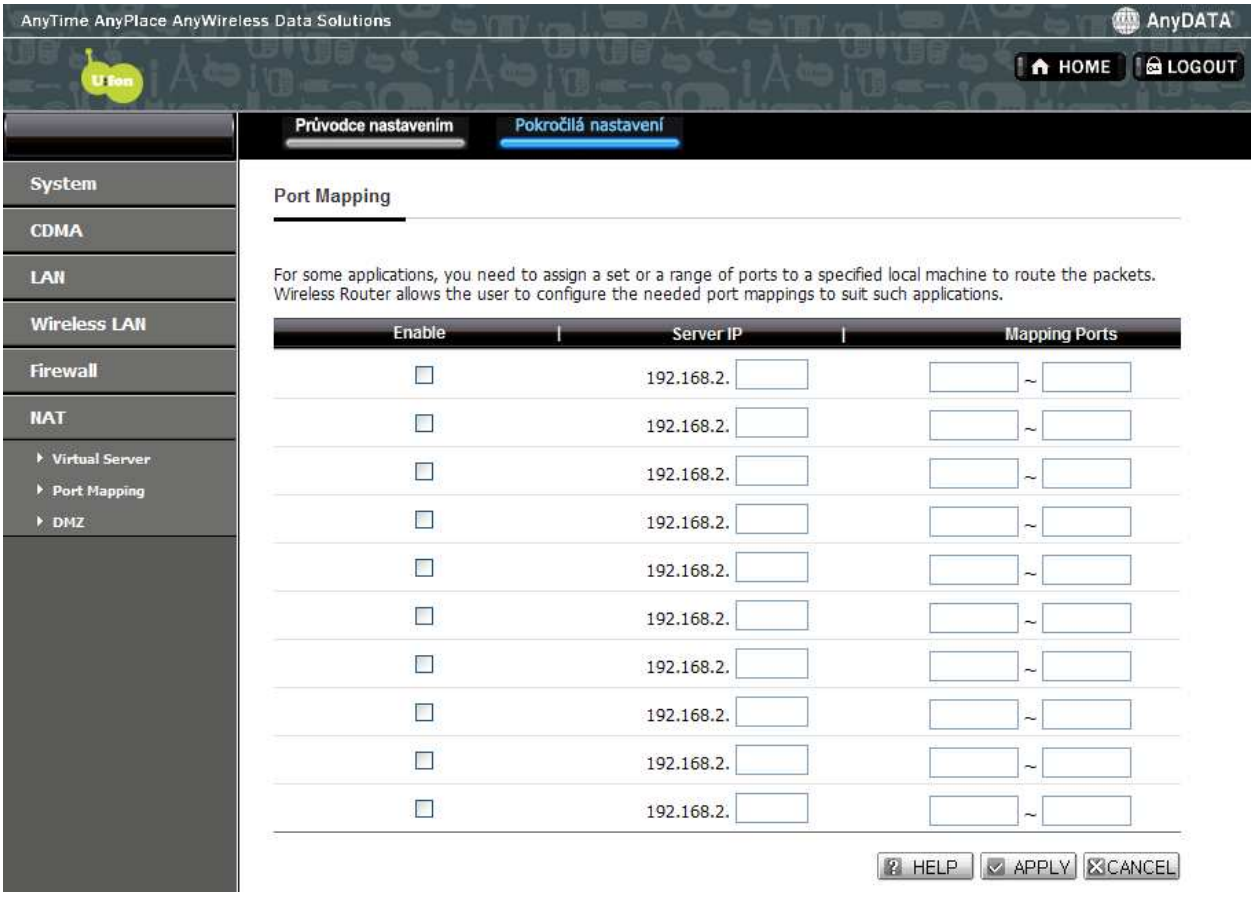
You Can configure the Wireless Router as a virtual server so that remote users accessing services such as the Web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP address.

In other words, depending on the requested service (TCP/UDP port numbers), the Wireless Router redirects the external service request to the appropriate server (located at another internal IP address).

How to use?

1. Enable : To enable the specified entry of the virtual server.
2. Protocol To select virtual server protocol type of the specified entry.
3. Private IP : To enter a private IP address of specified entry.
4. Private Port To enter a private Port number of the specified entry.
5. To enter a public port number of the internet user to access the virtual server.

Advanced Setup > NAT > Port Mapping



Port Mapping

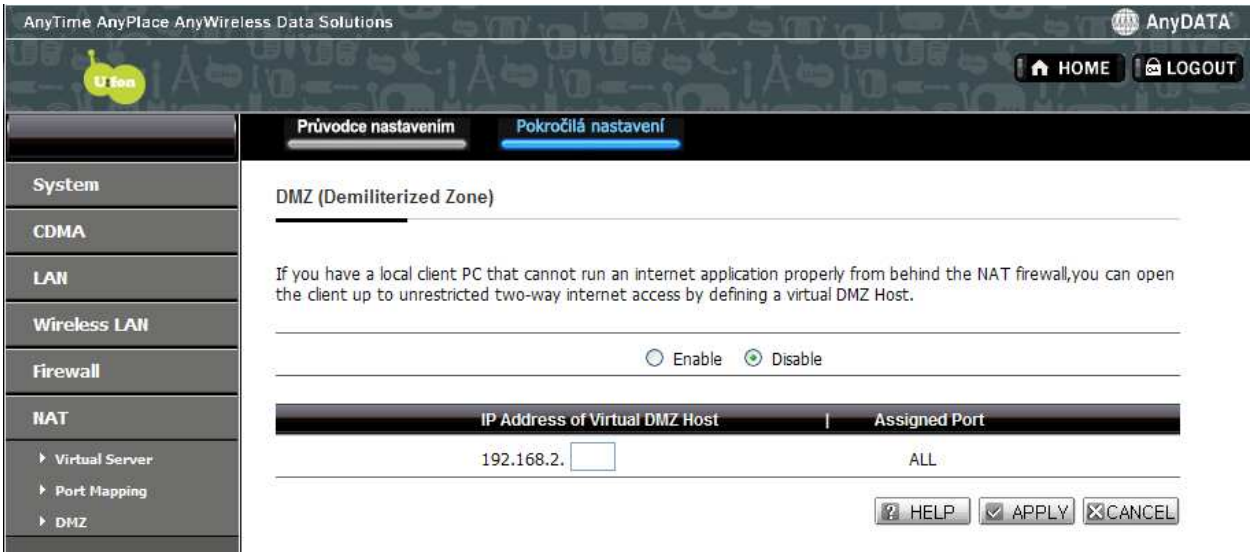
For some applications, you need to assign a set or a range of ports to a specified local machine to route the packets. Wireless Router allows the user to configure the needed port mappings to suit such applications.

When network user try to access LAN, user need to assign and mapping the port number of application protocol to network IP and relevant port number of LAN.
By using port forwarding setup, you can do IP address and port number mapping

How to use?

1. Enable : To enable a specified entry of the Port Mapping.
2. Server IP : To enter the IP Address of a specified local machine.
3. Mapping Port : To assign a range of port or specific port number to route the packets.

Advanced Setup > NAT > DMZ



DMZ (Demilitarized Zone)

If you have a local client PC that cannot run an internet application properly from behind the NAT firewall, you can open the client up to unrestricted two-way internet access by defining a virtual DMZ Host.

This enable PC that has IP or MAC address can operate as WEB, FTP, Telenet or mail server without separate port forwarding, which means all port is opened.

How to use?

1. Enable : To enable or disable the DMZ setting of ROUTER.
   Select the check box to enable.
2. IP Address : To enter IP Address of the DMZ host.

4. RJ11 Interface for Voice Call

AWR-501L can make Voice Call with RJ11 Interface. A wire phone and RJ11 Interface of AWR-501L both enable Voice Call as follow.

1. Connect the line of the wire phone to 'Tel port' on the backside of AWR-501L of the wire phone.
2. When the phone is in on-hook state (put down), turn AWR-501L on, leave the phone for 10 sec during the system boot.
3. Once the system boots up, you may hear Dial Tone when you answer the phone. If once the connection is properly established, you should be able to receive and send Voice.

<Note> The registration may spend about 30 sec on proper CDMA network so you better not operate since the CDMA network in general. You better not to operate since the registration takes about 30sec for CDMA network in general.

4. After checking Dial Tone on the phone, enter the phone number you wish to call.
5. If you hang on the phone for about 4 sec after pressing phone number, AWR-501L will initiates making Voice Origination Call.
6. If you can hear Ring Back Tone, Voice Origination Call is connected successfully. Then you can speak on the phone.
7. You may send DTMF by pressing the number keys during ARS.
8. When you hear Reorder Tone, you need to hang up and try it again. (If there is no valid dial tone. 4sec when key is pressed or 10sec when key is not pressed.)
9. When you hang on the phone (Off-hook), you can not receive Incomming Voice Call even you didn't make a call. Remember that you only can receive Incomming Voice Call in On-Hook state.
10. Sending and receiving Voice Call are available during Data Connection.
11. When you hang on the phone without the network connection, you may hear warning tone and do not try to dial.
    You can hear dial tone in Off-hook state on the network connection and then try to dial.

5. Troubleshooting

This section provides an overview of common issues, and possible solutions for the installation and operation of the AnyDATA AWR-501L.

1. Why am I not able to obtain a wireless connection.

• An Ethernet connection is required to troubleshoot the AWR-501L.
If you have enabled Encryption on the AWR-501L, you must also enable encryption on all wireless clients in order to establish a wireless connection.
• Ensure that the ESSID on the AWR-501L and the Wireless Client are exactly the same.
If they are not, your wireless connection will not be established.
• Move the AWR-501L and the wireless client into the same room, and then test the wireless connection.
• Disable all security settings such as **WEP**, and **MAC Address Control**.
• Turn off the AWR-501L and the client. Turn the AWR-501L back on again, and then turn on the client.
• Ensure that the LED indicators are indicating normal activity. If not, ensure that the AC power and Ethernet cables are firmly connected.
• Ensure that the IP Address, subnet mask, gateway and DNS settings are correctly entered for the network.
• Keep your product at least 3-6 feet away from electrical devices that generate RF noise.
Examples include: microwaves, monitors, electric motors, and so forth.

2. What should I do if my wireless client cannot access the Internet?

• Establish WiFi Connection. If you selected either **WEP** or **WPA-PSK** encryption, ensure encryption settings match your WiFi settings. WiFi and encryption settings must match to ensure AWR-501L Configuration Menu, and Internet access. Please refer to your WiFi adapter documentation for additional information. Ensure that the wireless client is associated and joined with the correct Access Point. To check this connection, follow the steps below:

1. **Right-click** on the **Local Area Connection icon** in the taskbar.
2. Select **View Available Wireless Networks**. The **Connect to Wireless Network** screen appears.
Ensure you have selected the correct available network.
Ensure the IP Address assigned to the wireless adapter is within the same IP Address range as the Access Point and gateway. The AWR-501L has an IP Address of **192.168.2.1.** Wireless adapters must have an IP Address in the same range (e.g., 192.168.0.x). Although the subnet mask must be the same for all the computers on the network, no two devices may have the same IP Address. Therefore, each device must have a unique IP Address.

• To check the **IP Address** assigned to the wireless adapter, follow the steps below:

1. **Double-click** on the **Local Area Connection icon** in the taskbar.
2. Select the **Support tab.** The **IP Address** will be displayed.

3. Why am I not able to access the Configuration Menu when I use my computer to configure the router?

• Ensure that the **IP Address** is in the same range and subnet as the AWR-501L.

The IP Address of the AWR-501L is 192.168.2.1. All the computers on the network must have a unique IP Address within the same range (e.g., 192.168.0.x). Any computers that have identical IP Addresses will not be visible on the network. All computers must also have the same subnet mask (e.g., 255.255.255.0).

Do a **Ping test** to make sure that the AWR-501L is responding.

Go to **Start > Run**. Type **cmd**. Press **Enter.** Type **ping 192.168.2.1.**

A successful ping shows four replies.

• If you have changed the **default** IP Address, ensure you ping the correct IP Address assigned to the AnyDATA AWR-501L. Ensure that your Ethernet Adapter is working properly, and that all network drivers are installed properly.

• The network adapter name displayed below is provided as an example. Network adapter names will vary depending on your specific adapter. The installation steps listed below are applicable for all network adapters.

4. What can I do if my LAN cable does not work properly?

• First, ensure that there is a solid cable connection between the Ethernet port on the AWR-501L, and your NIC (Network Interface Card).

• Second, ensure that the settings on your NIC adapter are “Enabled,” and set to accept an IP address from the DHCP.

• If settings appear to be correct, ensure that you are *not* using a crossover Ethernet cable.

5. Why does my wireless connection keep dropping?

• Antenna Orientation. Try different antenna orientations for the AWR-501L.

Try to keep the antenna at least 6 inches away from the wall or other objects.

• Keep your product away (at least 3-6 feet) from electrical devices that generate RF noise, like microwaves, monitors, electric motors, etc.

6. What should I do if I forgot my security key?

• If you forgot your security key, the WiFi card will be unable to establish a proper connection.

If a security key setting has been set for the AWR-501L, it must also be set for the WiFi card that will connect to the AWR-501L.

6. Technical Specifications

Standards
• IEEE 802.11b/g
• IEEE 802.3
• IEEE 802.3u

Advanced Firewall Features
• IP Filtering
• Scheduling
• NAT (Network Address Translation)
• MAC Filtering

Operating Temperature
• 0ºC to 50ºC

Humidity:
• 70% maximum

Wireless Frequency Range:
• 2.412GHz to 2.484GHz

LEDs:
• Power
• CDMA
• Wi-Fi (Wireless Connection)
• LAN

Physical Dimensions:
• L = 120mm
• W = 155mm
• H = 30.5

Wireless Transmit Power:

RF Output Power	802.11g: 16dBm typical @ 54Mbps 802.11b: 19dBm typical @ 11Mbps

• 15dBm ± 2dB

Security:
• 802.11b/ 802.11g
• WPA- WiFi Protected Access (64-,128-WEP with Shared Key Authentication)

External Antenna Type:
• Two detachable Female SMA (Wi-Fi / CDMA)

Modulation Technology:

Modulation	802.11g: OFDM with BPSK, QPSK and 16/64-QAM sub-carrier modulations 802.11b: DBPSK, DQPSK, CCK (DSSS)

• Orthogonal Frequency Division Multiplexing (OFDM)

Power Input:
• Ext. Power Supply DC 5V, 2.0A

Weight:
• about 280g

Warranty:
• 24 months

Wireless Data Rates with Automatic Fallback:

WLAN Data Rate	802.11g : 54, 48, 36, 24, 18, 12, 9, 6 Mbps 802.11b : 11, 5.5, 2, 1 Mbps